GRUNDIG SERVICE MANUAL

TV

Service Manual

Sach-Nr./Part No.
72010-019.80

Additionally required Service Manuals for the Complete Service:

Service Manual

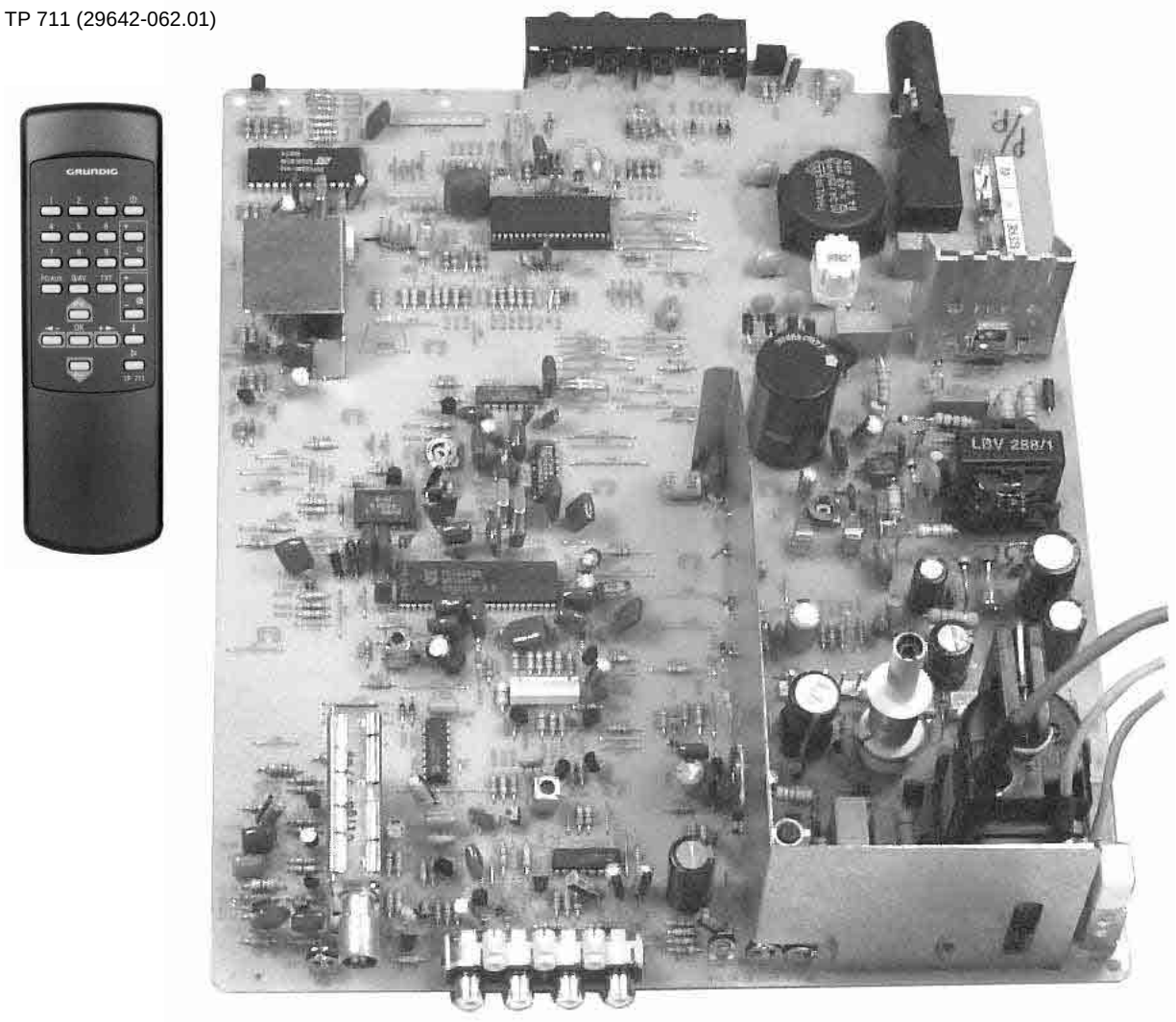
Safety

Sach-Nr./Part No.
72010-800.00

CUC 400

P14 - 6210/4	(9.21508-0302 / G.CD 3902)	**T20 - 6210/8**	
P14 - 6210/4 text		**T20 - 6210/8 text**	(9.21509-0275 / G.CD 3775)
P14 - 6210/6		**T51 - 721/5**	
P14 - 6210/6 text		**T51 - 721/5 text**	(9.21509-0475 / G.CE 2375)
P14 - 6210/8	(9.21508-0202 / G.CD 3602)	**T21 - 6210/4**	
P14 - 6210/8 text	(9.21508-2202 / G.CE 0502)	**T21 - 6210/4 text**	(9.21510-0375 / G.CD 4175)
T20 - 6210/4	(9.21509-0375 / G.CD 4075)	**T21 - 6210/6**	
T20 - 6210/4 text		**T21 - 6210/6 text**	
T20 - 6210/6		**T21 - 6210/8**	
T20 - 6210/6 text		**T21 - 6210/8 text**	(9.21510-0275 / G.CD 3875)

TP 711 (29642-062.01)



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General Section

The regulations and safety instructions shall be valid as provided by the "Safety" Service Manual, part number 72010-800.00, as well as the respective national deviations.

Safety Advice

The X-radiation developing in the sets conforms to the X-radiation Regulations (January 8, 1987), issued by the Physikalisch-Technische Bundesanstalt (federal physiotechnical institution).
The high tension for the picture tube and thus the developing X-radiation depends on the precise adjustment of the +A power supply. After every repair of the power supply unit or the horizontal deflection stage it is imperative that the EHT for the picture tube is checked and re-adjusted if necessary.
To avoid consequential damages to the chassis or the picture tube the integrated protective circuits are allowed to be put out of operation only for a short time.
When replacing the picture tube use only the types specified in the spare parts lists.

Circuit Diagram Symbols

Vertical amplitude

Horizontal amplitude

Horizontal picture position

Vertical picture position

Vertical linearity

25Hz — 25Hz interlace signal

Volume

Tint

Brightness

Contrast

Colour contrast

AGC — Automatic gain control

AUDIO — Audio signal

AUDIO IN — Audio signal input

AUDIO OUT — Audio signal output

B — Blue signal

BB — Baseband

COIN — Coincidence

FBAS — CCVS signal

G — Green signal

HOR. SYNC1 — Horizontal synchronizing pulse

IF — Intermediate frequency

R — Red signal

SB — Beam current limiting

SCL — I²C-Bus Clock

SDA — I²C-Bus data

SOUND IF — Sound intermediate frequency

VERT. SYNC — Vertical synchronizing pulse

VIDEO — Video signal

VIDEO IN — Video signal input

VIDEO OUT — Video signal output

Switching voltage AV

Switching voltage data mode

Switching voltage norm

Switching voltage standby

UHF switching voltage

Automatic frequency control voltage

Voltage synthesizer tuning

Tuning voltage

Delayed control voltage

Switching voltage VHF high band

Switching voltage VHF low band

Technical Data

	P14-6210/4 P14-6210/4 text	P14-6210/6 P14-6210/6 text	P14-6210/8 P14-6210/8 text	T20-6210/4 T20-6210/4 text	T20-6210/6 T20-6210/6 text	T20-6210/8 T20-6210/8 text	T 51-721/5 T 51-721/5 text	T21-6210/4 T21-6210/4 text	T21-6210/6 T21-6210/6 text	T21-6210/8 T21-6210/8 text
Picture Tube										
Visible picture	34cm	34cm	34cm	48cm	48cm	48cm	48cm	51cm	51cm	51cm
Screen diagonale	37cm (14")	37cm (14")	37cm (14")	51cm (20")	51cm (20")	51cm (20")	51cm (20")	55cm (21")	55cm (21")	55cm (21")
Deflection angle	90°	90°	90°	90°	90°	90°	90°	90°	90°	90°
Vertical frequency	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz	50Hz
Electronic										
Programme positions	99 TV + 1 AV	99 TV + 1 AV	99 TV + 1 AV	99 TV + 1 AV	99 TV + 1 AV	99 TV + 1 AV	99 TV + 1 AV	99 TV + 1 AV	99 TV + 1 AV	99 TV + 1 AV
Tuner	hyperband (optional)	hyperband	hyperband	hyperband (optional)	hyperband	hyperband	hyperband	hyperband (optional)	hyperband	hyperband
TV-Standard	PAL/ NTSC 3.58 / 4.43MHz B/G	PAL/SECAM/ NTSC 3.58 / 4.43MHz B/G, D/K	PAL/SECAM/ NTSC 3.58 / 4.43MHz B/G, D/K, M, I	PAL/ NTSC 3.58 / 4.43MHz B/G	PAL/SECAM/ NTSC 3.58 / 4.43MHz B/G, D/K	PAL/SECAM/ NTSC 3.58 / 4.43MHz B/G, D/K, M, I	PAL/SECAM/ NTSC 4.43MHz B/G, D/K	PAL/ NTSC 3.58 / 4.43MHz B/G	PAL/ NTSC 3.58 / 4.43MHz B/G	PAL/SECAM/ NTSC 3.58 / 4.43MHz B/G, D/K, M, I
Teletext	East / West only model with text	East / West only model with text	East / West only model with text	East / West only model with text	East / West only model with text	East / West only model with text	Cyrillic only model with text	East / West only model with text	East / West only model with text	East / West only model with text
Music power	3W	3W	3W	4W	4W	4W	4W	8W	8W	8W
Connections Rear Panel										
Video IN / OUT	2 x Cinch	2 x Cinch	2 x Cinch	2 x Cinch	2 x Cinch	2 x Cinch	2 x Cinch	2 x Cinch	2 x Cinch	2 x Cinch
Audio IN / OUT	2 x Cinch	2 x Cinch	2 x Cinch	2 x Cinch	2 x Cinch	2 x Cinch	2 x Cinch	2 x Cinch	2 x Cinch	2 x Cinch
Mains Stage										
Mains voltage (variable)	90…270V	90…270V	90…270V	90…270V	90…270V	90…270V	90…270V	90…270V	90…270V	90…270V
Mains frequency	50 / 60Hz	50 / 60Hz	50 / 60Hz	50 / 60Hz	50 / 60Hz	50 / 60Hz	50 / 60Hz	50 / 60Hz	50 / 60Hz	50 / 60Hz
Power consumption	ca. 40W	ca. 40W	ca. 40W	ca. 55W	ca. 55W	ca. 55W	ca. 55W	ca. 60W	ca. 60W	ca. 60W
Standby	ca. 7W	ca. 7W	ca. 7W	ca. 7W	ca. 7W	ca. 7W	ca. 7W	ca. 7W	ca. 7W	ca. 7W

Operating Instructions CUC 400

Note:
This chapter contains excerpts from the operating instructions. For further particulars please refer to the appropriate user instructions.

LOCAL CONTROL OPERATION

1. Mains On/Off Switch.

   Press the power switch 1 on the TV set. The indicator will light up. Program number is automatically appears on upper left corner of the screen for approximately 5 seconds.
   Press the power switch once again to switch off the set.

2. Indicator - Operating (*green*/red*),
   Standby (*red*).

3. Remote Sensor.

4. (◄ **-**)**,** (+ ►) for setting the sound volume.

5. (**P-**), (**P+**) Program selection button.

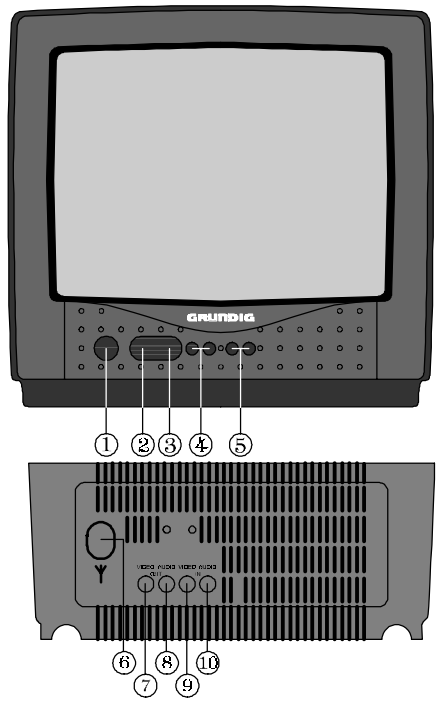
6. Aerial input 75 Ohms.

7. Video Output.

8. Audio Output.

9. Video Input.

10. Audio Input.



* For particular models

PICTURE ADJUSTMENT MODE

Press (◄ **-**) and (+ ►) simultaneously into picture adjustment mode.
With button (**P+**), the symbol and scale will be selected sequentially as follows :

Brightness ➡ Contrast ➡ Colour ➡ Tint (in case of NTSC) ➡ Brightness.

Adjust to required analog level with (◄ **-**) and (+►) buttons.

Press (◄ **-**) and (+ ►) simultaneously or no other local key is pressed for approximately 5 seconds will go back to normal.

REMOTE CONTROL UNIT

The Remote Control Unit is the Primary Control Unit of your TV receiver. It allows you to operate all functions and setting.

1...**9 (0/AV)** Direct select program position (also AV).

⏻ Standby On/Off.

☼ **- / +** Brightness, Contrast.

- / + Colour, Tint.

PC/AUX Shift key for Contrast, Tint. Hold down for 3 seconds to call up the tuning system and program setting data.

TXT Teletext On/Off.

P+ / **P-** Select program position.

i Display program position. Display sleep timer. Teletext overview. Hold down for 3 seconds to call up the multifunction menu.

OK To confirm and store selected values. Press and hold for 3 seconds to call up optimum analogue parameters.

◄ **-** **+** ► Volume.

🔇 Sound On/Off (muting).

TUNING AND PROGRAMMING

Press the (**PC/AUX**) button for approx. 3 seconds. The programming menu appears, active parameter will become *red*, and the other remain *cyan*. To terminate press (**PC/AUX**) button for approx. 3 seconds to leave the menu at any position.

Press (**0**...**9**) or (**P+ P-**) buttons to select program number.
Press (**PC/AUX**) button to move to the next parameter.
Press (**P+**) button to select frequency band sequentially as follows:

VHF L ➡ VHF H ➡ UHF ➡ VHF L

Press (**PC/AUX**) button to move to the next parameter.
Press (**P+**) button to select '**AUTO**' (automatic tuning) or '**MANUAL**' (manual tuning).
Press (**PC/AUX**) button to move to the next parameter.

Start tuning with ◄ **-** **+** ► buttons.
◄ **-** **+** ► buttons are for manual tuning (positive and negative direction).
To start auto tuning with **+** ► button and stop with ◄ **-** , during this time you can press and hold ◄ **-** button to reverse tuning for overjumped station.
Press **+** ► button again to continous auto tuning.
Press (**PC/AUX**) button to move to the next parameter.

SOUND SYSTEM

Press (**P+**) button to select system sequentially as follows:

BG ➡ DK ➡ I ➡ M ➡ BG

Press (**PC/AUX**) button to move to the next parameter.

STATION LABEL (particular model only)

Press (**+** ►) buttons to select one of four digits and (**P+**), (**P-**) buttons to select charactors.
Press (**OK**) button to call up the **STORE** mode.

STORE P_ _appears to request for the displayed number or a possibly new program number (copy function is also possible).

You can activate this function by pressing (**OK**) button at any position.

Press **OK,** storage and display of the current programming menu.

Press (**PC/AUX**) button for approx. 3 seconds to leave the menu.

SOUND MUTE

By pressing the button ( ) the sound can be cut off and press the same button once to get the sound back.

SLEEP TIMER

You can set the timer so that the TV is automatically switched off to Stand By mode after a period of 5 to 120 minutes in steps of 5 minutes.

For example, if you wish to set the timer to switch off after 60 minutes, press the button (i) for approximately 3 seconds till multifunction display is on the screen. Press the button (i) to select symbol ( ) change from *cyan* to *red*, then repeatedly press (**P+**) to change the time from OFF to 60 minutes. The TV automatically switches to stand by after 60 minutes. If you have made a wrong entry and want to cancel the entry set the timer to (OFF).
During the timer is activated, you can recall the remaining time by pressing (i) button once.

SECRET CODE

With a four digit secret code you can protect your TV against unauthorised use.

Press the button (i) for approx. 3 sec. till multifunction display is on the screen.
Press the button (i) to move to the 'key' symbol change from *cyan* to *red.*
Enter a four digits secret code via 0...9, confirm by **OK** button and leave the menu with storage by pressing the button (i) for approx. 3 seconds.The 'XXXX' show that the set will be locked after having been switched off once by mains button.

Erasing the secret code by entering the last code again.

NOTE

If you ever forget your secret code number, the key on the last page will help you. Pressing the button combinations as shown will cancel the secret code and restore the unit back into operation. Please cut and keep this portion of cover in the safe custody immediately on purchase.

PICTURE & SOUND ADJUSTMENTS

PROGRAM NUMBER POSITION

Select with (**P+**) or (**P-**) buttons to the required program number. For direct access press the required program number on the key board. For two digit program number (from 10 to 99) press the first digit and the second digit. The second digit should be pressed immediately after the first, before the first digit with a '**-**' disappears from the screen. AV programing can be accessed directly by pressing button (**0/AV**).

Press (i) button once. The program number position will be displayed on the left corner of the TV screen. The display will disappear after 5 seconds.

SOUND/VOLUME

Adjust to required level with (**+** ►) and (◄ **-**) buttons. The scale and symbol will be indicated on the screen.

BRIGHTNESS

Press (**+** ☼ **-**). The scale and brightness symbol will be displayed. Make suitable adjustment by pressing (**+**) for increase and (**-**) for decrease before the scale disappears.

CONTRAST

Press (**PC/AUX**) button once then press (**+** ☼ **-**).The scale and contrast symbol will be displayed. Make suitable adjustment by pressing (**+**) for increase and (**-**) for decrease before the scale disappears.

COLOUR

Press (**+** **-**). The scale and colour symbol will be displayed. Make suitable adjustment by pressing (**+**) for increase or (**-**) for decrease before the scale disappears.

TINT

Press (**PC/AUX**) button once then press (**+** **-**). The scale and tint symbol will be displayed. Make suitable adjustment by pressing (**+**) for increase or (**-**) for decrease before the scale disappears

AV RECORDING & PLAYBACK

VIDEO RECORDING

At the rear of the TV receiver are 2 sets of cinch sockets for video/audio in/out, see page 6.

Similarly in Video Cassette Recorders, sockets are provided for 'Video in' and 'Audio in'.

Interconnecting Cables between VCR & TV set are commercially available as accessories. VCR manual should be referred to ensure that appropriate connectors are used.

For recording, connect
- 'Video out' from TV Receiver to 'Video in' of VCR/VCP.
- 'Audio out' from TV Receiver to 'Audio in' of VCR/VCP.

Select the program you wish to record with (**P+**) or (**P-**) button.
Start the VCR/VCP and operate in the recording mode as described in the operating manual for your VCR/VCP.

PLAYBACK IN AV MODE

For VCR and VCP

For play back interconnect as follows :
- 'Video in' socket 9 from Receiver to 'Video out' of VCR/VCP.
- 'Audio in' socket 10 from Receiver to 'Audio out' of VCR/VCP.

Press and hold button (**P+**) or (**P-**) or (**AV)** directly till display of '**AV**' appears on the upper left hand corner of the TV screen. Start the VCR and operate it in the play back mode as described in the operating manual for VCR.

PLAYBACK IN RF MODE

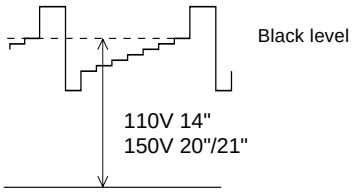
Connection - Connect "RF out" of VCR to "Aerial input" of TV.
Allocate the channel of VCR Output (Refer to your VCR Manual) to any program position by channel search procedure as already explained.

Alignments

All alignment controls not mentioned in this description are preset at the factory and must not be re-aligned in the case of repairs.

Measuring instruments: Oscilloscope with 10:1 test probe, high-resistance voltmeter, colour bar test pattern.

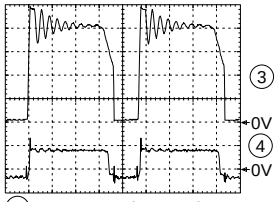
Cecks and alignments after replacement or repair of :
Power Supply: Power voltages must be checked after every repair and before every alignment. See alignment 1.1
Tuner, IF Amplifier: alignment 1.8
Vertical Deflection: alignment 1.4…1.6
Horizontal Deflection: alignment 1.2, 1.3, 1.7
IC201: alignment 1.2, 1.8, 1.9
F202: alignment 1.10
CRT Panel: alignment 1.2, 1.11

Alignment	Preparations	Alignment Procedure
1.1 +A voltage	Brightness: minimum Contrast: minimum Volume: minimum Voltmeter: D910 Cathode	Set control **VR901** to **124V** ± 0.2V
1.2 Screen grid voltage U_{SG}	Feed in a test pattern with grey scale Align the screen brightness with the remote control handset so that the grey aeras just become dark (Switch the TV receiver to AV mode) Oscilloscope: collector TR602/604/606 choose test point with the highest voltage level	With the control **SG** on DS-transformer set the voltage to **110V** (14") or **150V** (20"/21") 
1.3 Focus	Feed in a convergence test pattern Contrast: maximum Brightness: medium	With the focus control **FOC** on DS-transformer align the horizontal lines for maximum sharpness
1.4 Line width	Feed in a test pattern	Align picture-overscan to 2-3mm with **L801**
1.5 Vertical shift	Feed in a test pattern	Align picture to vertical middle position with **VR703**
1.6 Vertical geometry	Feed in a test pattern	Align linearity with **VR701** and amplitude to 2-3mm over-scan with **VR702**
1.7 Horizontal shift	Feed in a test pattern	Align test pattern to middle position with **VR202**
1.8 Tuner AGC	Feed in a standard test pattern UHF band channel 60; the RF must be ≥1.5mV (64dBµV, noise-free picture)	With **VR201** align voltage at IC201-(47) to maximum, approx. **4.5V**, and then reduce it by approx. 0.5V
1.9 Demodulator filter	Disconnect contact 1 from tuner Feed in 38.9MHz from test generator to pin 1 from F201 Voltmeter : IC201-(9)	With **L203** align voltage to **2V** Re-connect contact 1 to tuner after alignment
1.10 Sound trap	Feed in a NTSC picture (4.5MHz sound) without colour carrier Oscilloscope: emitter TR202	With **L202** align to minimum
1.11 White balance	Feed in a colour test pattern Colour contrast (◕): minimum Contrast (◑): maximum Align the screen brightness (☼) so that the gradation from the darkest grey scale value to black is just still visible	Set the controls **VG (VR601)** and **VB (VR602)** so that no discolouration is visible in the grey scale

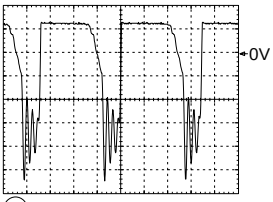
Layout of the PCBs and Circuit Diagrams

Oscillograms Chassis Board

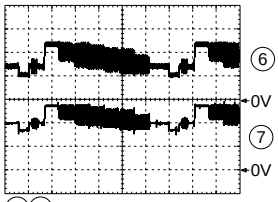
1 10V/cm, 2µs/cm
2 1V/cm, 2µs/cm



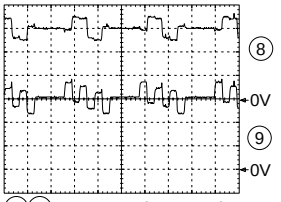
3 100V/cm, 2µs/cm
4 1V/cm, 2µs/cm



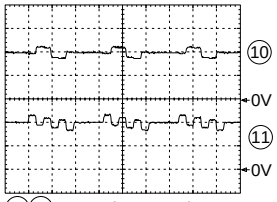
5 100V/cm, 2µs/cm



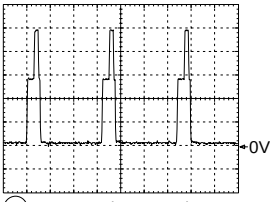
6 7 2V/cm, 10µs/cm



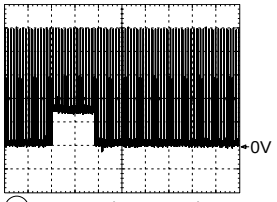
8 9 500mV/cm, 20µs/cm



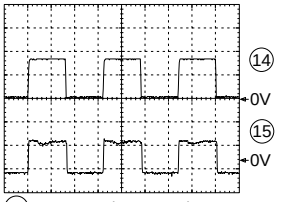
10 11 2V/cm, 20µs/cm



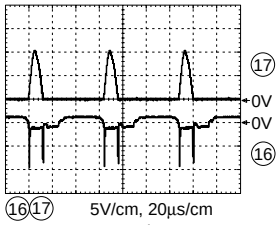
12 1V/cm, 20µs/cm
line



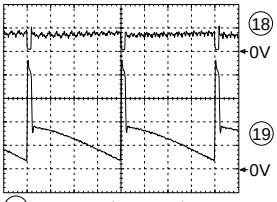
13 1V/cm, 500µs/cm
picture



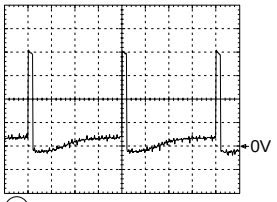
14 5V/cm, 20µs/cm
15 1V/cm, 20µs/cm



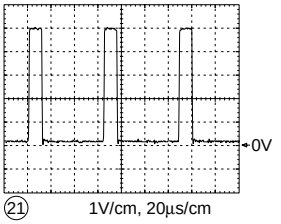
16 17 5V/cm, 20µs/cm
test probe 100:1



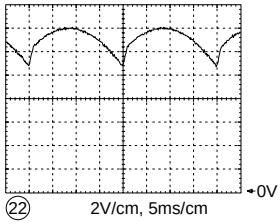
18 5V/cm, 5ms/cm
19 10V/cm, 5ms/cm



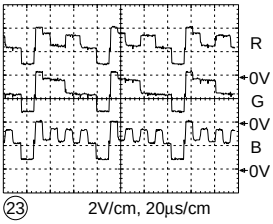
20 1V/cm, 5ms/cm



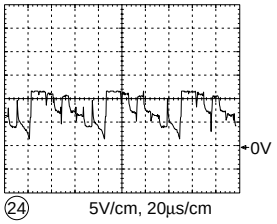
21 1V/cm, 20µs/cm



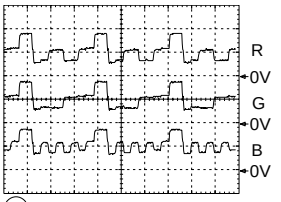
22 2V/cm, 5ms/cm



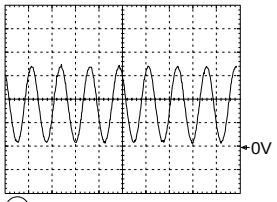
23 2V/cm, 20µs/cm



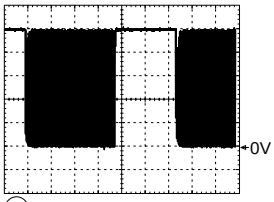
24 5V/cm, 20µs/cm



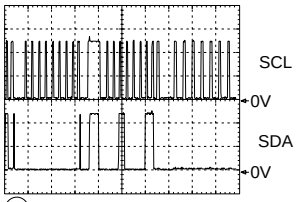
25 100V/cm, 20µs/cm



26 1V/cm, 100ns/cm

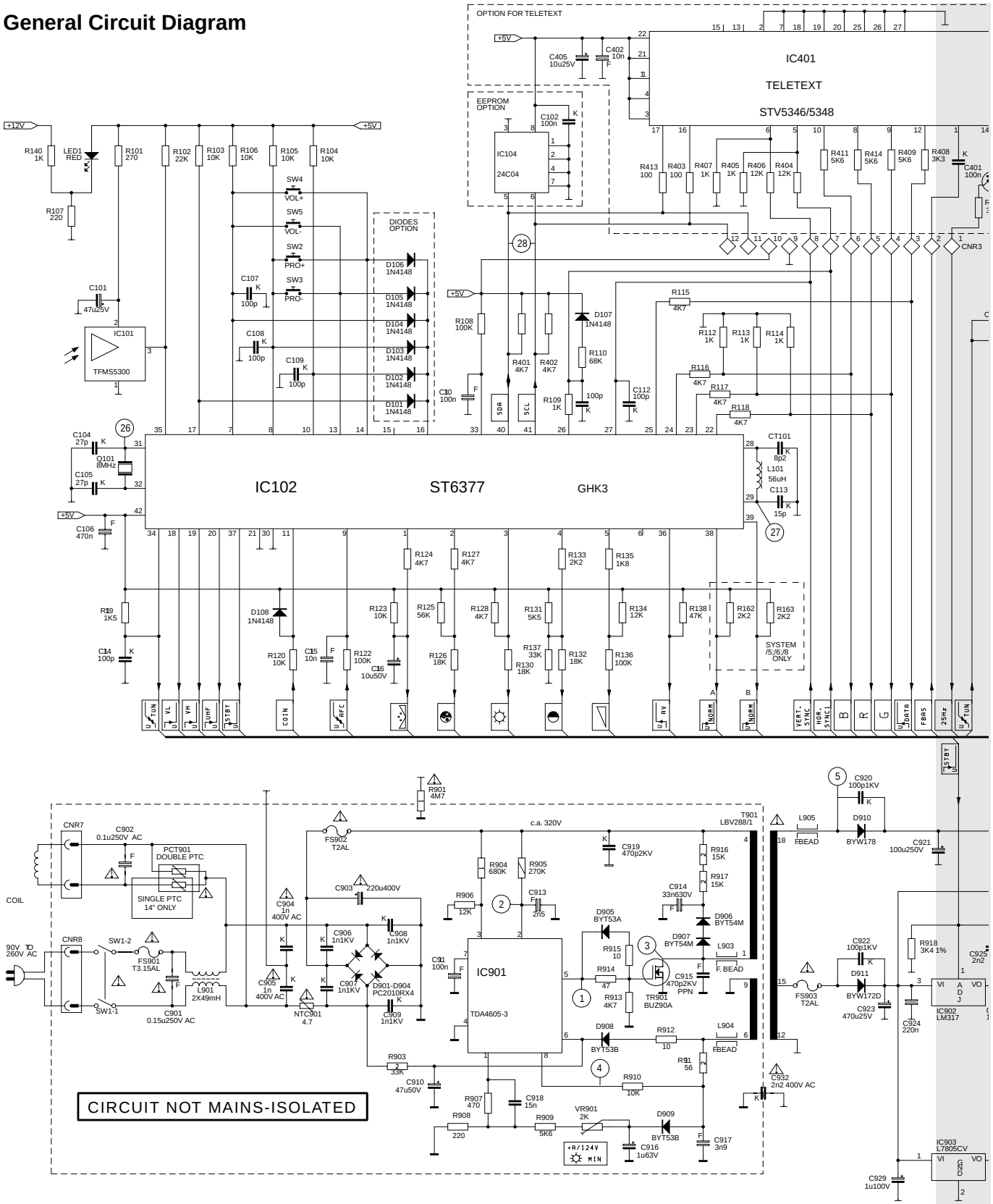


27 1V/cm, 10µs/cm



28 2V/cm, 200µs/cm
on text mode

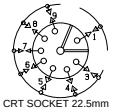
General Circuit Diagram



DIODE OPTION		
REF	WITH DIODES	WITHOUT DIODES
D101	WITH LOGO	WITHOUT LOGO
D102	AV2V1,A	AV
D103	MULTI SOUND IF	5.5MHz SOUND IF
D104	TINT	NO TINT
D105	HYPERBAND	NO HYPERBAND
D106	POWER ON START	POWER ON STANDBY

CRT SOCKET

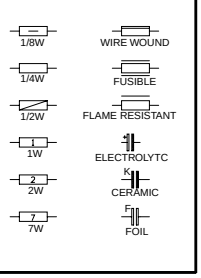
CNR5



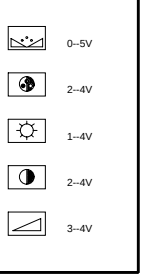
CRT SOCKET 22.5mm

NORM ASSIGNMENT			
STANDARD		U-NORM A	U-NORM B
1	B/G	1	1
2	D/K	1	0
3	I	0	1
4	M	0	0

IMPORTANT CIRCUIT SYMBOLS



APPROX. VALUES



PIN ASSIGNMENT					
1	TINT	15	KBCOL2	29	OSD OSC-OUT
2	COLOUR	16	KBCOL3	30	TEST (GND)
3	BRIGHTNESS	17	KBCOL4	31	OSC-IN
4	CONTRAST	18	VHF LOW	32	OSC-OUT
5	VOLUME	19	VHF HIGH	33	RESET
6	AV1/AV2	20	UHF	34	VS TUNING
7	KBROW0	21	GROUND (VSS)	35	REMOTE IN
8	KBROW1	22	RED-OUT	36	AV/TV
9	AFC IN	23	GREEN-OUT	37	POWER ON/OFF
10	KBROW2	24	BLUE-OUT	38	SOUND IF SELECT
11	TV STATUS	25	BLANKING	39	SOUND IF SELECT
12	N.C.	26	H-SYNC	40	SDA
13	KBCOL0	27	VSYNC	41	SCL
14	KBCOL1	28	OSD OSC-IN	42	5V (VDD)

CUC 400 Layout of the PCBs and Circuit Diagrams

A34JLL90X23
A48JLL90X01
A51JSW90X03

#-PARTS	14"	20"/21"
#TR602	BF422	BFG71
#TR604	BF422	BFG71
#TR606	BF422	BFG71
#R603	10K	12K
#R610	10K	12K
#R619	10K	12K
#R607	2K7	10K
#R616	2K7	10K
#R625	2K7	10K
#R632	6.2	6.8

IC201			
PIN 1	2,9V	PIN 19	2,5V
PIN 2	6,2V	PIN 20	2,5V
PIN 3	6,2V	PIN 21	0,2V
PIN 4	6,2V	PIN 22	3,3V
PIN 5	1,2V	PIN 23	3,3V
PIN 6	3,9V	PIN 24	3,3V
PIN 7	3,4V	PIN 25	2,0V
PIN 8	1,8V	PIN 26	1,5V
PIN 9	3,8V	PIN 27	2,5V
PIN 10	8,4V	PIN 28	3,8V
PIN 11	–	PIN 29	3,8V
PIN 12	3,2V	PIN 30	1,5V
PIN 13	4,4V	PIN 31	1,5V
PIN 15	3,5V	PIN 32	1,7V
PIN 16	0,0V	PIN 33	0,7V
PIN 17	2,2V	PIN 34	1,4V
PIN 18	2,5V	PIN 35	3,6V
		PIN 36	8,5V
		PIN 37	4,2V
		PIN 38	0,7V
		PIN 39	2,9V
		PIN 40	3,6V
		PIN 41	–
		PIN 42	2,2V
		PIN 43	2,9V
		PIN 44	3,2V
		PIN 45	4,2V
		PIN 46	4,2V
		PIN 47	4,8V
		PIN 48	3,9V
		PIN 49	1,8V
		PIN 50	3,5V
		PIN 51	4,5V
		PIN 52	6,5V

IC203	
PIN 1	1,7V
PIN 3	8,5V
PIN 7	3,4V
PIN 8	4,2V
PIN 9	1,4V
PIN 10	1,5V
PIN 15	0,7V
PIN 16	5,7V

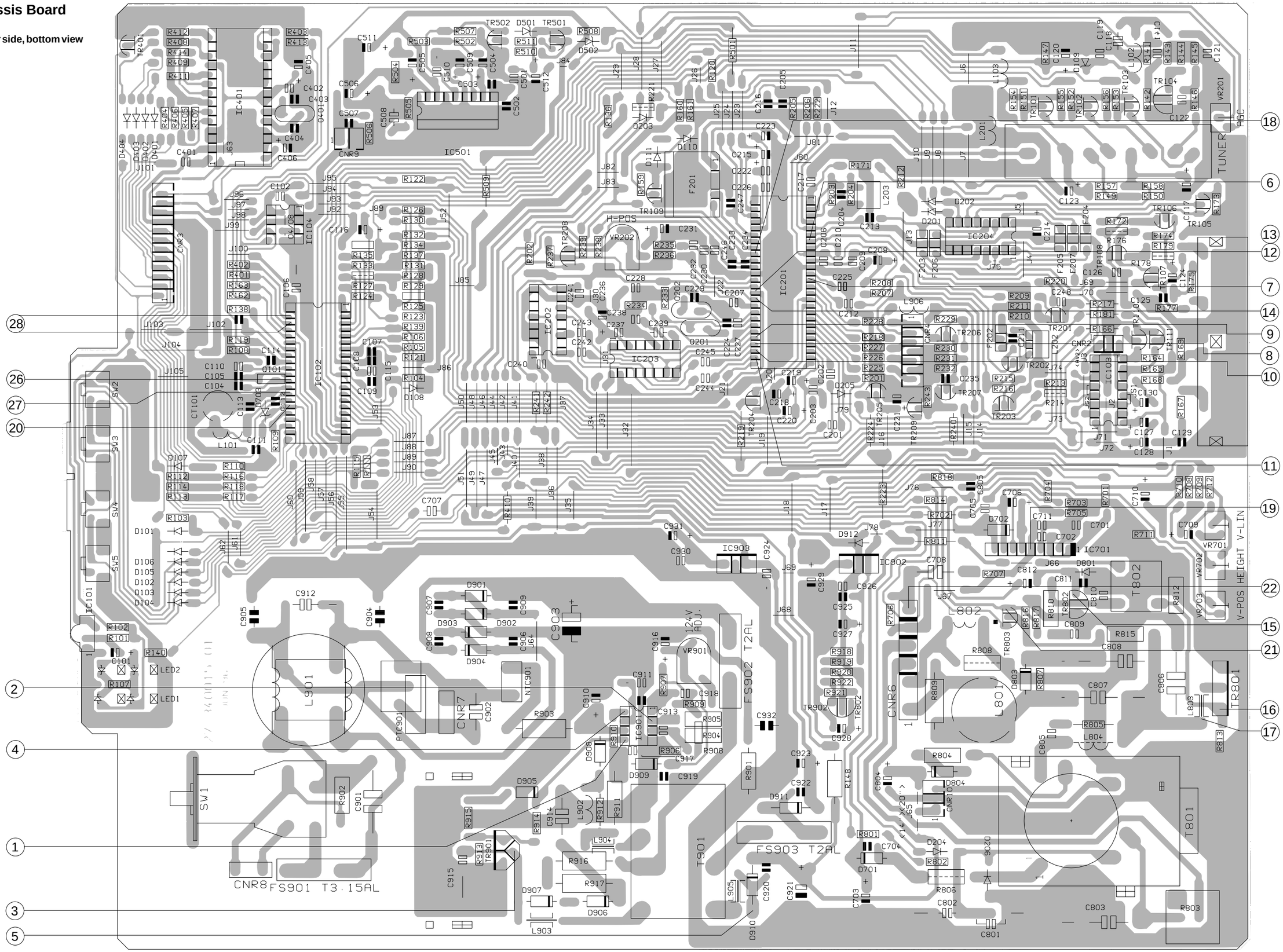
IC202	
PIN 1	5,0V
PIN 5	0,8V
PIN 9	5,0V
PIN 11	2,9V
PIN 12	2,9V
PIN 14	1,3V
PIN 16	1,3V

SYSTEM	/4	/5	/6	/8
PAL	X	X	X	X
SECAM		X	X	X
NTSC 3.58	X		X	X
NTSC 4.43	X	X	X	X
B/G	F203*	F204*	F204*	F204*
D/K		F205*	F205*	F05*
I				F206*
M				F207*
IC204* C214*		X	X	X
SAW FILTER F201*	G1875M	K2955M	K2955M	K6259K
L201*	2,2µH	1µH	1µH	1µH

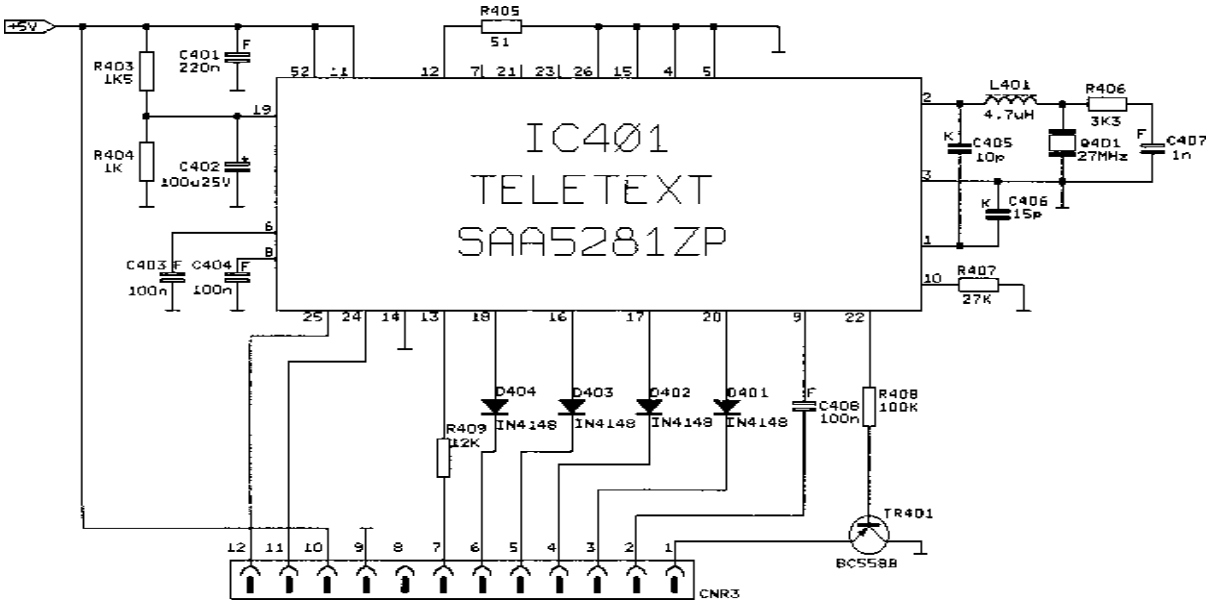
Layout of the PCBs and Circuit Diagrams CUC 400

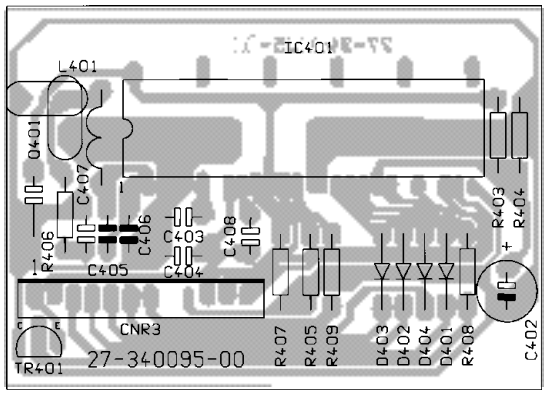
Chassis Board

Solder side, bottom view

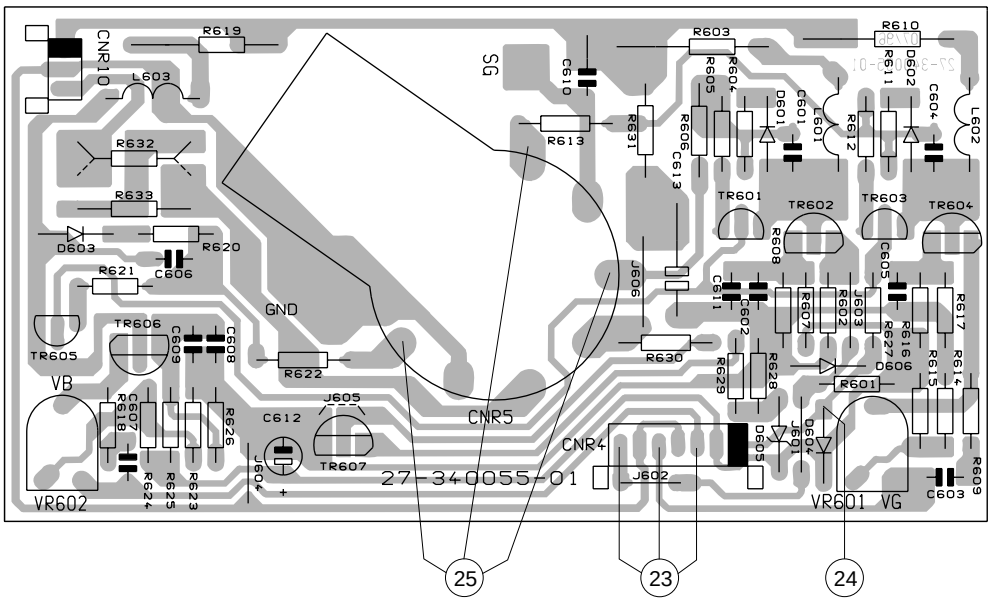


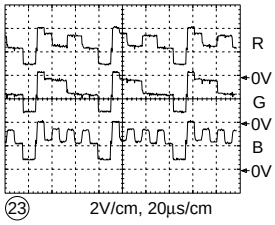
Teletext

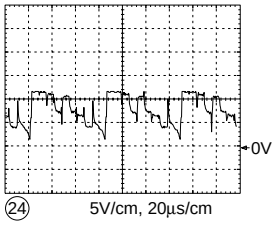


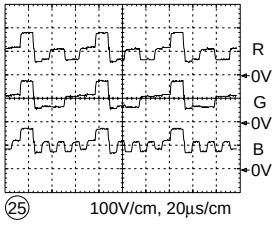


CRT Panel









GRUNDIG Ersatzteilliste Spare Parts List

TV

Ⓓ Btx ✱ 32700 #

7 / 96

CUC 400

SACH-NR. / PART NO.: 25560-630.20

POS. NO.	FIG.	PART NUMBER	IO PART NUMBER	QTY.	DESCRIPTION
TUNER		75990-700.30	IO.26-403300-00	1	UHF/VHF/HYPER VS TUNER
TUNER		75990-700.09	IO.26-257892-00	1	U/V TUNER (ENV-578G9F2) f./4 T
PWR SW		29633-682.01	IO.11-068201-00	1	POWER ON/OFF SWITCH KNOB 21“
PWR SW		29633-736.01	IO.11-063601-00	1	POWER ON/OFF SWITCH KNOB 14" 20"
FS901-03		09621-113.02	IO.12-050007-00	6	FUSE HOLDER
AVIN/OUT		75990-700.21	IO.44-060040-00	1	4 IN 1 RCA SOCKET
IC 101		8305-367-530	IO.29-005300-00	1	IC - TFMS 5300
IC 102		75990-700.10	IO.29-006377-00	1	IC - ST 6377 GHK3
IC 103		6365-205-064	IO.29-014053-00	1	IC - MC14053BCP/CD4053BP/
IC 201		8305-338-362	IO.29-008362-00	1	IC - TDA 8362 A N3
IC 202		8305-334-665	IO.29-004665-00	1	IC - TDA 4665
IC 203		8305-338-395	IO.29-008395-00	1	IC - TDA 8395
IC 204		6365-205-041	IO.29-014052-00	1	IC - MC14052BCP/CD4052BE/
IC 401		75990-700.29	IO.29-005346-00	1	IC - STV 5346
IC 401		75990-700.49	IO.29-005281-00	1	IC - SAA 5281 ZP/RM3/BALTIC/RUSSIAN
IC 501		8305-367-245	IO.29-007245-00	1	IC - TDA 7245 A
IC 701		8305-343-653	IO.29-003653-00	1	IC - TDA 3653 B
IC 901		8305-354-605	IO.29-004605-00	1	IC - TDA 4605/TDA 4605-3
IC 903		8383-101-397	IO.29-007805-00	1	IC - 7805 REGULATOR
IC 902		75990-700.18	IO.29-100317-00	1	IC - LM 317 REGULATOR
LED 1		75954-028.71	IO.31-520202-00	1	LED - RED Dia 3mm
L 202		07202-405.10	IO.36-402405-10	1	IFT (07202-405.10)
L 203		19202-185.97	IO.36-353185-10	1	IFT (19202-185.97)
L 801		09246-850.21	IO.33-461100-00	1	HORIZONTAL WIDTH COIL
L 801		09246-860.21	IO.33-437196-00	1	HORIZONTAL WIDTH COIL 14“ 20" T51
L 802		29203-115.97	IO.33-480085-00	1	LINEARITY COIL
L 901		75990-700.40	IO.42-349335-00	1	LINE FILTER 2X49mH 1.3A
VR 202		8792-002-151	IO.34-080103-00	1	TRIM.POTEN. 10K OHM 8mm H
VR 702		8792-001-309	IO.34-280101-00	1	TRIM.POTEN. 100 OHM 8mm V
VR 901		75990-700.38	IO.34-080202-00	1	TRIM.POTEN. 2K OHM 8mm H
SW-1		75990-700.39	IO.35-210204-00	1	POWER SWITCH WITHOUT M/C
SW 2		29703-357.11	IO.35-611105-00	1	MINIATURE TACT SWITCH
SW 3		29703-357.11	IO.35-611105-00	1	MINIATURE TACT SWITCH
SW 4		29703-357.11	IO.35-611105-00	1	MINIATURE TACT SWITCH
SW 5		29703-357.11	IO.35-611105-00	1	MINIATURE TACT SWITCH
F 201		8319-006-259	IO.42-006259-00	1	SAW FILTER - OFW K6259K
F 202		8602-755-021	IO.42-200552-00	1	CERAMIC TRAP - TPS 5.5MHZ
F 204		19203-011.97	IO.42-210552-00	1	CER. FILTER - SFE 5.5MHZ
F 205		19203-013.97	IO.42-210652-00	1	CER. FILTER - SFE 6.5MHZ
F 206		19203-012.97	IO.42-210602-00	1	CER. FILTER - SFE 6.0MHZ
F 207		19203-014.97	IO.42-210452-00	1	CER. FILTER - SFE 4.5MHZ
Q 201		8382-047-004	IO.42-413581-00	1	QUARTZ - 3.579545MHZ
Q 202		8382-136-004	IO.42-414431-00	1	QUARTZ - 4.433619MHZ
Q 401		8382-501-138	IO.42-401382-00	1	QUARTZ - 13.875MHZ
Q 401		75990-700.50	IO.42-400273-00	1	QUARTZ - 27.000MHZ/BALTIC/RUSSIAN
T 801	⚠	75990-700.16	IO.38-060481-00	1	FLYBACK TRANSFORMER
T 802		75990-700.15	IO.38-000401-00	1	DRIVING TRANSFORMER
T 901	⚠	75990-700.17	IO.38-070488-00	1	SWITCHING X'FORMER
PCT 901	⚠	75990-699.01	IO.54-912180-00	1	PTC DOUBLE THERMISTOR
PCT 901	⚠	75990-700.22	IO.54-930000-00	1	PTC 30 OHM(ZPB46BL300H)14“
NTC 901		8311-000-590	IO.54-947900-00	1	NTC 4.7 OHM
FS 903	⚠	8315-620-003	IO.62-232002-00	1	FUSE-SEMKO T 2.0AL 20x5mm
FS 902	⚠	8315-620-003	IO.62-232002-00	1	FUSE-SEMKO T 2.0AL 20x5mm
FS 901	⚠	8315-622-003	IO.62-233152-00	1	FUSE-SEMKO T 3.15AL 20x5mm
R 241	⚠	8700-199-017	IO.64-847935-00	1	FUSIBLE RES. 1/4W 4.7 OHM 5%
R 242	⚠	8700-199-017	IO.64-847935-00	1	FUSIBLE RES. 1/4W 4.7 OHM 5%
R 509	⚠	8700-199-023	IO.64-862955-00	1	FUSIBLE RES. 1/4W 6.2 OHM 5%
R 632	⚠	75990-700.51	IO.64-862955-00	1	FUSIBLE RES. 1W 6.2 OHM 5% 14“
R 632	⚠	75990-700.52	IO.64-868955-00	1	FUSIBLE RES. 1W 6.8 OHM 5% 20“
R 711	⚠	8700-199.007	IO.64-818965-00	1	C.F.RES 1/4W 1.8 OHM 5%
R 804	⚠	75990-700.41	IO.64-810045-00	1	FUSIBLE RES. 1/2 W 10 OHM 5%
R 806	⚠	75990-700.53	IO.64-868955-00	1	FUSIBLE RES. 1W 6.8 OHM 5%
R 807	⚠	75990-700.54	IO.64-810335-00	1	FUSIBLE RES. 1/4W 10 KOHM 5%
R 809	⚠	75990-700.56	IO.64-482165-00	1	M. O. RES. 2W 820 OHM 5%
R 811	⚠	8700-199-033	IO.64-822035-00	1	FUSIBLE RES. 1/4W 22 OHM 5%
R 901	⚠	8766-349-161	IO.8766-349-16	1	C.F.RES LI 0414 4.7M OHM VDE
R 922	⚠	8700-199-029	IO.64-815035-00	1	FUSIBLE RES. 1/4W 15 OHM 5%
TR 101		8302-201-579	IO.70-200558-00	1	TRANSISTOR - BC 558 B
TR 102		8302-201-579	IO.70-200558-00	1	TRANSISTOR - BC 558 B
TR 103		8302-201-579	IO.70-200558-00	1	TRANSISTOR - BC 558 B
TR 104		8302-920-223	IO.70-002222-00	1	TRANSISTOR - PH 2222
TR 105		8302-201-553	IO.70-200548-00	1	TRANSISTOR - BC 548 B
TR 106		8302-201-553	IO.70-200548-00	1	TRANSISTOR - BC 548 B
TR 107		8302-201-553	IO.70-200548-00	1	TRANSISTOR - BC 548 B
TR 108		8302-201-579	IO.70-200558-00	1	TRANSISTOR - BC 558 B
TR 109		8302-201-553	IO.70-200548-00	1	TRANSISTOR - BC 548 B
TR 110		8302-201-553	IO.70-200548-00	1	TRANSISTOR - BC 548 B
TR 201		8302-201-553	IO.70-200548-00	1	TRANSISTOR - BC 548 B
TR 202		8302-201-579	IO.70-200558-00	1	TRANSISTOR - BC 558 B
TR 203		8302-201-579	IO.70-200558-00	1	TRANSISTOR - BC 558 B
TR 204		8302-201-553	IO.70-200548-00	1	TRANSISTOR - BC 548 B
TR 205		8302-201-579	IO.70-200558-00	1	TRANSISTOR - BC 558 B
TR 206		8302-201-579	IO.70-200558-00	1	TRANSISTOR - BC 558 B
TR 207		8302-201-553	IO.70-200548-00	1	TRANSISTOR - BC 548 B
TR 208		8302-201-579	IO.70-200558-00	1	TRANSISTOR - BC 558 B
TR 209		8302-201-579	IO.70-200558-00	1	TRANSISTOR - BC 558 B
TR 501		8302-201-579	IO.70-000558-00	1	TRANSISTOR - BC 558
TR 502		8303-272-337	IO.70-000337-00	1	TRANSISTOR BC 337-25
TR 801		8302-260-508	IO.30-100508-00	1	TRANSISTOR - BU 508 D
TR 802		8303-285-637	IO.70-000637-00	1	TRANSISTOR - BC 637
TR 803		8302-201-553	IO.70-200548-00	1	TRANSISTOR - BC 548 B
TR 901		8302-269-092	IO.30-100090-00	1	MOS FET - BUZ 90 A
TR 902		8303-272-337	IO.70-000337-00	1	TRANSISTOR BC 337-25
D 101		8309-215-045	IO.71-204148-00	1	DIODE - 1N 4148
D 103		8309-215-045	IO.71-204148-00	1	DIODE - 1N 4148
D 104		8309-215-045	IO.71-204148-00	1	DIODE - 1N 4148
D 105		8309-215-045	IO.71-204148-00	1	DIODE - 1N 4148
D 106		8309-215-045	IO.71-204148-00	1	DIODE - 1N 4148
D 107		8309-215-045	IO.71-204148-00	1	DIODE - 1N 4148
D 108		8309-215-045	IO.71-204148-00	1	DIODE - 1N 4148
D 110		8309-201-283	IO.71-200282-00	1	DIODE - BA 282
D 111		8309-201-283	IO.71-200282-00	1	DIODE - BA 282
D 201		8309-215-045	IO.71-204148-00	1	DIODE - 1N 4148
D 202		8309-215-045	IO.71-204148-00	1	DIODE - 1N 4148
D 204		8309-215-045	IO.71-204148-00	1	DIODE - 1N 4148
D 205		8309-215-045	IO.71-204148-00	1	DIODE - 1N 4148
D 501		8309-707-505	IO.71-445279-00	1	ZENER DIODE - 2V7 0.5W 5%
D 502		8309-707-505	IO.71-445279-00	1	ZENER DIODE - 2V7 0.5W 5%
D 701		8309-210-138	IO.71-204936-00	1	DIODE - 1N 4936
D 702		8309-210-138	IO.71-204936-00	1	DIODE - 1N 4936
D 703		8309-707-012	IO.71-445479-00	1	ZENER DIODE - 4V7 0.5W 5%
D 801		8309-215-045	IO.71-204148-00	1	DIODE - 1N 4148
D 803		8309-201-005	IO.71-200157-00	1	DIODE - BA 157
D 804		8309-204-268	IO.71-200016-00	1	DIODE - BYV 16
D 901		75990-700.42	IO.71-302007-00	1	DIODE - RF 2007 (PS2010R)
D 902		75990-700.42	IO.71-302007-00	1	DIODE - RF 2007 (PS2010R)
D 903		75990-700.42	IO.71-302007-00	1	DIODE - RF 2007 (PS2010R)
D 904		75990-700.42	IO.71-302007-00	1	DIODE - RF 2007 (PS2010R)

POS. NO.	FIG.	PART NUMBER	IO PART NUMBER	QTY.	DESCRIPTION
D 905		8309-516-753	IO.71-201053-00	1	DIODE - BYT 53 A
D 906		8309-516-854	IO.71-200054-00	1	DIODE - BYT 54 M
D 907		8309-516-854	IO.71-200054-00	1	DIODE - BYT 54 M
D 908		8309-516-754	IO.71-202053-00	1	DIODE - BYT 53 B
D 909		8309-516-754	IO.71-202053-00	1	DIODE - BYT 53 B
D 910		8309-517-178	IO.71-200178-00	1	DIODE - BYW 178
D 911		8309-517-172	IO.71-200172-00	1	DIODE - BYW 172D
D 912		8309-215-045	IO.71-204148-00	1	DIODE - 1N 4148
C 804		75990-700.43	IO.95-222627-00	1	HV-ELE.CAP. 22uF 20% 250V
C 901	⚠	75990-700.28	IO.95-415427-00	1	VDE AC CAP. 0.15uF 250VAC
C 902	⚠	75990-700.55	IO.95-410427-00	1	VDE AC CAP. 0.1uF 250VAC
C 904	⚠	8660-098-234	IO.95-110236-00	1	VDE C.CAP. 1nF 10% 400VAC
C 905	⚠	8660-098-234	IO.95-110236-00	1	VDE C.CAP. 1nF 10% 400VAC
C 921		75990-700.25	IO.95-010727-00	1	HRC-E.CAP. 100uF250V665mA
C 932	⚠	75990-700.27	IO.95-122237-00	1	VDE C.CAP.2.2nF20% 400VAC

Es gelten die Vorschriften und Sicherheitshinweise gemäß dem Service Manual "Sicherheit", Sach-Nummer 72010-800.00, sowie zusätzlich die eventuell abweichenden, landesspezifischen Vorschriften!

The regulations and safety instructions shall be valid as provided by the "Safety" Service Manual, part number 72010-800.00, as well as the respective national deviations.

GRUNDIG Ersatzteilliste Spare Parts List

TV

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P 14-6210/4
P 14-6210/4 text
P 14-6210/6
P 14-6210/6 text
P 14-6210/8
P 14-6210/8 text

SACH-NR. / PART NO.: 25560-660.00

POS. NO.	FIG.	PART NUMBER	IO PART NUMBER	QTY.	DESCRIPTION
	1	75990-700.00	IO.11-017391-00	1	FRONT CABINET 14“ CUC-400
	2	75990-700.01	IO.11-029511-00	1	BACK CABINET 14“ CUC-400
	3	29501-664.01	IO.11-066401-00	1	4 IN 1 UP/DOWN UNIT
	4	29632-082.01	IO.11-078201-00	1	GRUNDIG LOGO 14“
	5	75990-700.02	IO.14-018701-00	1	IR WINDOW
	6	29620-017.01	IO.22-105103-00	1	TELESCOPE ANTENNA
	7	75990-700.03	IO.57-140512-00	1	SPEAKER - 4“ 12 OHM 1.5W
	8 ⚠	09246-170.73	IO.91-060334-00	1	DEGAUSSING COIL 14“
	9 ⚠	8300-020-039	IO.8300-020-039	1	A 34 JLL 90X23 ORION 14“
		29642-062.01	IO.29642-062.01	1	REMOTE CONTROL TP-711
			25560-630.20	X	CUC 400
			25560-205.42	X	PICTURE TUBE BOARD
		72010-019.80			SERVICE MANUAL
					X = SEE SEPARATE PARTS LIST

Es gelten die Vorschriften und Sicherheitshinweise gemäß dem Service Manual "Sicherheit", Sach-Nummer 72010-800.00, sowie zusätzlich die eventuell abweichenden, landesspezifischen Vorschriften!

The regulations and safety instructions shall be valid as provided by the "Safety" Service Manual, part number 72010-800.00, as well as the respective national deviations.

GRUNDIG Ersatzteilliste Spare Parts List

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T 20-6210/4
T 20-6210/4 text
T 20-6210/6
T 20-6210/6 text
T 20-6210/8
T 20-6210/8 text

SACH-NR. / PART NO.: 25560-660.10

POS. NO.	FIG.	PART NUMBER	IO PART NUMBER	QTY.	DESCRIPTION
	1	75990-700.45	IO.11-017381-00	1	FRONT CABINET 20“ CUC-400"
	2	75990-700.46	IO.11-029441-00	1	BACK CABINET 20“ CUC-400"
	4	29632-114.01	IO.11-071401-00	1	GRUNDIG LOGO 20“/21"
	5	75990-700.02	IO.14-018701-00	1	IR WINDOW
	7	75990-700.47	IO.57-140808-01	1	SPEAKER - 4“ 8 OHM 4W“
	8 ⚠	09246-171.73	IO.91-060776-00	1	DEGAUSSING COIL
	9 ⚠	8300-020-315	IO.8300-020-315	1	A48JLL90X01 20“ ORION“
		29642-062.01	IO.29642-062.01	1	REMOTE CONTROL TP-711
			25560-630.20	X	CUC 400
			25560-205.42	X	PICTURE TUBE BOARD
		72010-019.80			SERVICE MANUAL
					X = SEE SEPARATE PARTS LIST

Es gelten die Vorschriften und Sicherheitshinweise gemäß dem Service Manual "Sicherheit", Sach-Nummer 72010-800.00, sowie zusätzlich die eventuell abweichenden, landesspezifischen Vorschriften!

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GRUNDIG Ersatzteilliste Spare Parts List

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T 21-6210/4
T 21-6210/4 text
T 21-6210/6
T 21-6210/6 text
T 21-6210/8
T 21-6210/8 text

SACH-NR. / PART NO.:

POS. NO.	FIG.	PART NUMBER	IO PART NUMBER	QTY.	DESCRIPTION
	1	75990-700.31	IO.11-017491-00	1	FRONT CABINET 21“ CUC-400
	2	75990-700.32	IO.11-029731-00	1	BACK CABINET 21“ CUC-400
	3	75990-700.33	IO.11-064401-00	1	4 IN 1 UP/DOWN UNIT
	4	29632-114.01	IO.11-071401-00	1	GRUNDIG LOGO 20“/21"
	5	29633-431.01	IO.14-013101-00	1	IR WINDOW
	6	75990-700.34	IO.12-081281-00	1	SPEAKER GRILL - LEFT
	7	75990-700.35	IO.12-081291-00	1	SPEAKER GRILL - RIGHT
	8	75990-700.36	IO.57-160908-00	2	SPEAKER 6“ X 2.25" 8 OHM
	9 ⚠	8300-020-534	IO.8300-020-534	1	A 51LSW90X03 21“ ORION
	10 ⚠	09246-171.73	IO.91-060776-00	1	DEGAUSSING COIL
		29642-062.01	IO.29642-062.01	1	REMOTE CONTROL TP-711
			25560-630.20	X	CUC 400
			25560-205.42	X	PICTURE TUBE BOARD
		72010-019.80			SERVICE MANUAL
					X = SEE SEPARATE PARTS LIST

Es gelten die Vorschriften und Sicherheitshinweise gemäß dem Service Manual "Sicherheit", Sach-Nummer 72010-800.00, sowie zusätzlich die eventuell abweichenden, landesspezifischen Vorschriften!

The regulations and safety instructions shall be valid as provided by the "Safety" Service Manual, part number 72010-800.00, as well as the respective national deviations.

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Spare Parts List

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T 51-721/5
T 51-721/5 text

SACH-NR. / PART NO.: 25560-660.10

POS. NO.	FIG.	PART NUMBER	IO PART NUMBER	QTY.	DESCRIPTION
	1	75990-700.45	IO.11-017381-00	1	FRONT CABINET 20" CUC-400
	2	75990-700.46	IO.11-029441-00	1	BACK CABINET 20" CUC-400
	3	29501-664.01	IO.11-066401-00	1	4 IN 1 UP/DOWN UNIT
	4	29632-114.01	IO.11-071401-00	1	GRUNDIG LOGO 20"/21"
	5	75990-700.02	IO.14-018701-00	1	IR WINDOW
	7	75990-700.47	IO.57-140808-01	1	SPEAKER - 4" 8 OHM 4W
	8 ⚠	09246-171.73	IO.91-060776-00	1	DEGAUSSING COIL
	9 ⚠	8300-020-534	IO.8300-020-315	1	A 51 JSW 90X 03 ORION 20"
		29642-062.01	IO.29642-062.01	1	REMOTE CONTROL TP-711
			25560-630.20	X	CUC 400
			25560-205.42	X	PICTURE TUBE BOARD
		72010-019.80			SERVICE MANUAL
					X = SEE SEPARATE PARTS LIST

Es gelten die Vorschriften und Sicherheitshinweise gemäß dem Service Manual "Sicherheit", Sach-Nummer 72010-800.00, sowie zusätzlich die eventuell abweichenden, landesspezifischen Vorschriften!

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Spare Parts List

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PICTURE TUBE BOARD

SACH-NR. / PART NO.:

POS. NO.	FIG.	PART NUMBER	IO PART NUMBER	QTY.	DESCRIPTION
TR 601		8302-220-421	IO.70-000421-00	1	TRANSISTOR - BF 421
TR 602		8302-220-422	IO.70-000422-00	1	TRANSISTOR - BF 422 14"
TR 602		8302-220-871	IO.70-000881-00	1	TRANSISTOR - BFG 71/BF881 20/21"
TR 602 OPTIONAL		75990-700.44	IO.30-004357-00	1	TRANSISTOR - ON 4357 20/21"
TR 603		8302-220-421	IO.70-000421-00	1	TRANSISTOR - BF 421
TR 604		8302-220-422	IO.70-000422-00	1	TRANSISTOR - BF 422 14"
TR 604		8302-220-871	IO.70-000881-00	1	TRANSISTOR - BFG 71/BF881 20/21"
TR 604 OPTIONAL		75990-700.44	IO.30-004357-00	1	TRANSISTOR - ON 4357 20/21"
TR 605		8302-220-421	IO.70-000421-00	1	TRANSISTOR - BF 421
TR 606		8302-220-422	IO.70-000422-00	1	TRANSISTOR - BF 422 14"
TR 606		8302-220-871	IO.70-000881-00	1	TRANSISTOR - BFG 71/BF881 20/21"
TR 606 OPTIONAL		75990-700.44	IO.30-004357-00	1	TRANSISTOR - ON 4357 20/21"
CNR 5		75990-700.05	IO.45-500012-11	1	CRT SOCKET - 22.5mm NECK
R 632	⚠	75990-700.07	IO.64-862955-00	1	FUSIBLE RES. 1 W 6.2 OHM 5%
D 601		8309-215-045	IO.71-204148-00	1	DIODE - 1N 4148
D 602		8309-215-045	IO.71-204148-00	1	DIODE - 1N 4148
D 603		8309-215-045	IO.71-204148-00	1	DIODE - 1N 4148
D 604		8309-215-045	IO.71-204148-00	1	DIODE - 1N 4148
L 601		75990-300.06	IO.73-315121-00	1	CHOKE COIL - 150uH
L 602		75990-300.06	IO.73-315121-00	1	CHOKE COIL - 150uH
L 603		75990-300.06	IO.73-315121-00	1	CHOKE COIL - 150uH
C 610		75990-700.06	IO.96-147258-00	1	HV-CER.CAP. 4.7nF 1KV Z

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NOTES

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